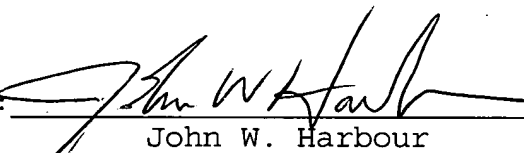


REMARKS/ARGUMENTS

Amendments have been made to the specification and sequences from the text and figures have been incorporated into the sequence listing. In response to the Formalities Letter of November 1, 2001, applicants include with this response a Sequence listing and a Computer Readable Form of the Sequence Listing. The undersigned hereby states that the Paper Copy and the Computer Readable Form submitted in accordance with 37 CFR§ 1.821 are identical. No new matter has been added by these amendments.

Attached hereto is a marked-up version of the changes made to the specification by the current amendment. The attached page(s) is/are captioned "Version with markings to show changes made". Favorable consideration is respectfully requested.

Respectfully submitted,

By:   
John W. Harbour  
Reg. No. 31,365

Johnson & Johnson  
One Johnson & Johnson Plaza  
New Brunswick, NJ 08933-7003  
(732) 524-2169  
Dated: January 2, 2002

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Specification:

The paragraph beginning at page 8, line 31, has been replaced with the following rewritten paragraph:

--**Figure 2.** Partial amino acid sequences of native codeinone reductase. Peptide 3 is SEQ ID NO: 9, Peptide 7 is SEQ ID NO: 10, Peptide 14 is SEQ ID NO: 11, Peptide 16 is SEQ ID NO: 12, Peptide 17 is SEQ ID NO: 13, Peptide 25 is SEQ ID NO: 14, and Peptide 29 is SEQ ID NO: 15.--

The paragraph beginning at page 9, line 7, has been replaced with the following rewritten paragraph:

-- Codeinone reductase peptides 3, 7, 14, 16, and 17 aligned with the reductase subunit of the 6'-deoxychalcone synthase complex from alfalfa (SEQ ID NO: 16), glycyrrhiza (SEQ ID NO: 17) and soybean (SEQ ID NO: 18) allowing the relative positioning of these internal peptides from opium poppy (SEQ ID NO: 19).--

The paragraphs beginning at page 10, line 26, have been replaced with the following rewritten paragraphs:

-- **Figure 10.** cDNA sequence of *cor1.1*. (SEQ ID NO: 20)  
**Figure 11.** cDNA sequence of *cor1.2*. (SEQ ID NO: 21)  
**Figure 12.** cDNA sequence of *cor1.3*. (SEQ ID NO: 22)  
**Figure 13.** cDNA sequence of *cor1.4*. (SEQ ID NO: 23)  
**Figure 14.** Partial cDNA sequence of *cor1.5*. (SEQ ID NO: 24)  
**Figure 15.** Partial cDNA sequence of *cor1.6*. (SEQ ID NO: 25)

--

The text beginning at page 12, line 1 and ending with line 22, has been replaced with the following rewritten text:

--

SEQ ID NO: 1

5'-GAA CTT TTT ATA ACT TCT AA-3' (derived from Peptide 14) and  
G C C C G C  
T

SEQ ID NO: 2

3'-GTG GTC TAA CGT CAI CGT TCI CCT TT-5' (derived from Peptide 7)  
A A G C

Resolution of an aliquot of the first PCR experiment by agarose gel electrophoresis revealed a mixture of DNA products, none of which was the expected band of approximately 480 bp. This was presumably due to the relatively low specificity of the degenerate primers coupled to a low abundance of codeinone reductase transcript. Another aliquot of the first PCR reaction mixture was, therefore, used as template for nested PCR with the following primers:

SEQ ID NO: 1

5'-GAA CTT TTT ATA ACT TCT AA-3' (same as Peptide 14 primer above) and  
G C C C G C  
T

SEQ ID NO: 3

3'-CAI CAC TTA GTT CAC CTT TAC-5' (nested primer derived from Peptide 16)  
G C C

to yield an approximately 360 bp DNA fragment and the following primers to yield an approximately 180 bp DNA product:

SEQ ID NO: 4

5-'GTI GTI AAC CAA GTI GAA ATG AGI CCI AC-3' (nested primer derived from  
T G G TC Peptide 16) and

SEQ ID NO: 2

3'-GTG GTC TAA CGT CAI CGT TCI CCT TT-5' (same as Peptide 7 primer above)  
A A G C

--

The text beginning at page 13, line 8 and ending at line 14, has been replaced with the following rewritten text:

--

SEQ ID NO: 5

5'-ATG GAG AGT AAT GGT GTA CCT-3' (located at the 5'-terminus) and

SEQ ID NO: 6

3'-TCT ACC ATT CAC TCC TGA CAG-5' (located in the 3'-flanking region)

followed by nested PCR with the following primer pair:

SEQ ID NO: 7

5'-ATG GCT AGC ATG GAG AGT AAT GGT GTA CCT ATG-3' (located at the  
Nhe 1 5'-terminus) and

SEQ ID NO: 8

3'-CTT CTC AAG ACC CTA CTC TTC CTA CCT AGG GAA-5' (located at the  
Bam HI 3'-terminus) .--

RE-RUN



PCT

#13  
COPY

## RAW SEQUENCE LISTING

DATE: 05/14/2004

PATENT APPLICATION: US/09/937,665A

TIME: 12:09:26

Input Set : A:\JJ1825.ST25.txt

Output Set: N:\CRF4\05142004\I937665A.raw

3 <110> APPLICANT: Kutchan, Toni M.  
4 Zenk, Meinhart H.  
5 Atkins, David G.  
6 Fist, Anthony J.  
8 <120> TITLE OF INVENTION: CODEINONE REDUCTASE FROM ALKALOID POPPY  
10 <130> FILE REFERENCE: JJ-1825  
12 <140> CURRENT APPLICATION NUMBER: US 09/937,665A  
13 <141> CURRENT FILING DATE: 2001-09-26  
15 <150> PRIOR APPLICATION NUMBER: PCT/AU00/00249  
16 <151> PRIOR FILING DATE: 2000-03-24  
18 <150> PRIOR APPLICATION NUMBER: AU PP 9463  
19 <151> PRIOR FILING DATE: 1999-03-26  
21 <160> NUMBER OF SEQ ID NOS: 25  
23 <170> SOFTWARE: PatentIn version 3.2  
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37 <223> OTHER INFORMATION: n = A or G  
39 <220> FEATURE:  
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42 <223> OTHER INFORMATION: n = T or C  
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45 <221> NAME/KEY: misc\_feature  
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60 <221> NAME/KEY: misc\_feature  
61 <222> LOCATION: (18)..(18)

## RAW SEQUENCE LISTING

DATE: 05/14/2004

PATENT APPLICATION: US/09/937,665A

TIME: 12:09:26

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Output Set: N:\CRF4\05142004\I937665A.raw

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79 <222> LOCATION: (3)..(3)  
80 <223> OTHER INFORMATION: n = T or C  
82 <220> FEATURE:  
83 <221> NAME/KEY: misc\_feature  
84 <222> LOCATION: (6)..(6)  
85 <223> OTHER INFORMATION: n = i  
87 <220> FEATURE:  
88 <221> NAME/KEY: misc\_feature  
89 <222> LOCATION: (8)..(8)  
90 <223> OTHER INFORMATION: n = T or G  
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95 <223> OTHER INFORMATION: n = T or A  
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103 <221> NAME/KEY: misc\_feature  
104 <222> LOCATION: (24)..(24)  
105 <223> OTHER INFORMATION: n = G or A  
107 <400> SEQUENCE: 2  
W--> 108 ttncncnng cnactgcaat ctgntg 26  
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## RAW SEQUENCE LISTING

DATE: 05/14/2004

PATENT APPLICATION: US/09/937,665A

TIME: 12:09:26

Input Set : A:\JJ1825.ST25.txt

Output Set: N:\CRF4\05142004\I937665A.raw

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181 <223> OTHER INFORMATION: n = A or G  
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185 <222> LOCATION: (22)..(22)  
186 <223> OTHER INFORMATION: n = A or T  
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190 <222> LOCATION: (23)..(23)  
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## RAW SEQUENCE LISTING

DATE: 05/14/2004

PATENT APPLICATION: US/09/937,665A

TIME: 12:09:26

Input Set : A:\JJ1825.ST25.txt

Output Set: N:\CRF4\05142004\I937665A.raw

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196 <223> OTHER INFORMATION: n = i  
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200 <222> LOCATION: (27)..(27)  
201 <223> OTHER INFORMATION: n = i  
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W--> 204 gtngtanaanc angtinganat gnnnccnac 29  
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212 <220> FEATURE:  
213 <223> OTHER INFORMATION: PCR primer  
215 <400> SEQUENCE: 5  
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222 <213> ORGANISM: Artificial Sequence  
224 <220> FEATURE:  
225 <223> OTHER INFORMATION: PCR primer  
227 <400> SEQUENCE: 6  
228 gacagtcctc acttaccatc t 21  
231 <210> SEQ ID NO: 7  
232 <211> LENGTH: 33  
233 <212> TYPE: DNA  
234 <213> ORGANISM: Artificial Sequence  
236 <220> FEATURE:  
237 <223> OTHER INFORMATION: Primer  
239 <400> SEQUENCE: 7  
240 atggctagca tggagagtaa tgggtgtacct atg 33  
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248 <220> FEATURE:  
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260 <220> FEATURE:  
261 <223> OTHER INFORMATION: Synthetic Construct  
264 <220> FEATURE:  
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## RAW SEQUENCE LISTING

DATE: 05/14/2004

PATENT APPLICATION: US/09/937,665A

TIME: 12:09:26

Input Set : A:\JJ1825.ST25.txt

Output Set: N:\CRF4\05142004\I937665A.raw

266 <222> LOCATION: (1)..(1)  
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272 1 5  
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276 <211> LENGTH: 11  
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278 <213> ORGANISM: Artificial Sequence  
280 <220> FEATURE:  
281 <223> OTHER INFORMATION: Synthetic Construct  
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285 Val Leu His Gln Ile Ala Val Ala Arg Gly Lys  
286 1 5 10  
289 <210> SEQ ID NO: 11  
290 <211> LENGTH: 10  
291 <212> TYPE: PRT  
292 <213> ORGANISM: Artificial Sequence  
294 <220> FEATURE:  
295 <223> OTHER INFORMATION: Synthetic Construct  
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299 Asp Asp Asp Glu Leu Phe Ile Thr Ser Lys  
300 1 5 10  
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304 <211> LENGTH: 16  
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309 <223> OTHER INFORMATION: Synthetic Construct  
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313 Ile Pro Asp Val Val Asn Gln Val Glu Met Ser Pro Thr Leu Gly Gln  
314 1 5 10 15  
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319 <212> TYPE: PRT  
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327 <221> NAME/KEY: misc\_feature  
328 <222> LOCATION: (1)..(1)  
329 <223> OTHER INFORMATION: Xaa can be any naturally occurring amino acid  
331 <400> SEQUENCE: 13  
W--> 333 Xaa Val Asn Glu Ile Pro Lys  
334 1 5  
337 <210> SEQ ID NO: 14  
338 <211> LENGTH: 5  
339 <212> TYPE: PRT  
340 <213> ORGANISM: Artificial Sequence

**RAW SEQUENCE LISTING ERROR SUMMARY**  
**PATENT APPLICATION: US/09/937,665A****DATE: 05/14/2004**  
**TIME: 12:09:27**Input Set : A:\JJ1825.ST25.txt  
Output Set: N:\CRF4\05142004\I937665A.raw**Please Note:**

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:1; N Pos. 3,6,9,12,15,18  
Seq#:2; N Pos. 3,6,8,9,12,24  
Seq#:3; N Pos. 4,10,16,19  
Seq#:4; N Pos. 3,6,9,12,15,18,22,23,24,27  
Seq#:9; Xaa Pos. 1  
Seq#:13; Xaa Pos. 1  
Seq#:14; Xaa Pos. 1  
Seq#:15; Xaa Pos. 5

## VERIFICATION SUMMARY

DATE: 05/14/2004

PATENT APPLICATION: US/09/937,665A

TIME: 12:09:27

Input Set : A:\JJ1825.ST25.txt

Output Set: N:\CRF4\05142004\I937665A.raw

L:65 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:0  
L:108 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:0  
L:141 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3 after pos.:0  
L:204 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4 after pos.:0  
L:271 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9 after pos.:0  
L:333 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13 after pos.:0  
L:353 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14 after pos.:0  
L:373 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:15 after pos.:0

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**FAX TRANSMISSION COVER SHEET**DATE: 05-14-2004Total Number of Pages Faxed: 15 (COV. INC.)

TO:

NAME: BARBARA ASHTON CAMPBELLORG.: PCT NATIONAL STAGE DIVISIONFAX NUMBER: 703-746-6705

FROM: Mark Spencer

Voice Ph. Number: (571)272-2510

FAX Ph. Number: (571)273-0221

Message:

RSL Re-Runs for S/N: 09/937,665A and  
10/343002.